

Lee

1645

PAGE: 1

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952A

DATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

This Raw Listing contains the General Information  
Section and up to first 5 pages.

PS

ENTERED

1 <110> APPLICANT: Fainzilber, Michael M.  
2 Kits, Karel S.  
3 Burlingame, Alma L.  
4 Olivera, Baldomero M.  
5 Walker, Craig  
6 Watkins, Maren  
7 Shetty, Reshma  
8 Cruz, Lourdes J.  
9 Imperial, Julita  
10 Colledge, Clark  
11 University of Utah Research Foundation  
12 Vrije Universiteit  
13 Regents of the University of California  
14 <120> TITLE OF INVENTION: Gamma-Conopeptides  
15 <130> FILE REFERENCE: Gamma-Conopeptides  
16 <140> CURRENT APPLICATION NUMBER: US/09/210,952A  
17 <141> CURRENT FILING DATE: 1998-12-15  
18 <150> EARLIER APPLICATION NUMBER: US 60/069,706  
19 <151> EARLIER FILING DATE: 1997-12-16  
20 <160> NUMBER OF SEQ ID NOS: 47  
21 <170> SOFTWARE: PatentIn Ver. 2.0  
22 <210> SEQ ID NO 1  
23 <211> LENGTH: 42  
24 <212> TYPE: PRT  
25 <213> ORGANISM: Artificial Sequence  
26 <220> FEATURE:  
27 <223> OTHER INFORMATION: Description of Artificial Sequence:generic formula  
28 of gamma-conopeptides  
29 <220> FEATURE:  
30 <221> NAME/KEY: PEPTIDE  
31 <222> LOCATION: (1)..(13)  
32 <223> OTHER INFORMATION: Xaa at residues 1, 2, 3, 4, 5, and 6 may be  
33 des-Xaa or any amino acid; Xaa at residues 8, 9,  
34 10, 11 and 12 may be any amino acid; Xaa at  
35 residue 13 may be des-Xaa or any amino acid.  
36 <220> FEATURE:  
37 <221> NAME/KEY: PEPTIDE  
38 <222> LOCATION: (15)..(19)  
39 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino  
40 acid; Xaa at residue 19 is Glu,  
41 gamma-carboxyglutamate or Gln.  
42 <220> FEATURE:  
43 <221> NAME/KEY: PEPTIDE  
44 <222> LOCATION: (22)..(28)

PAGE: 2

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952A

DATE: 01/28/2000

TIME: 11:59:04

Input Set: I210952A.RAW

45 <223> OTHER INFORMATION: Xaa at residues 22, 23 and 24 may be any amino  
46 acid; Xaa at residue 25 may be des-Xaa or any  
47 amino acid; Xaa at residues 27, 28 and 29 may be  
48 any amino acid.

49 <220> FEATURE:

50 <221> NAME/KEY: PEPTIDE

51 <222> LOCATION: (30)..(42)

52 <223> OTHER INFORMATION: Xaa at residues 30, 31 and 32 may be des-Xaa or  
53 any amino acid; Xaa at residues 34 and 35 may be  
54 any amino acid; Xaa at residues 36, 37, 38, 39,  
55 40, 41 and 42 may be des-Xaa or any amino acid.

56 <400> SEQUENCE: 1

W--> 57 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
58 1 5 10 15  
W--> 59 Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
60 20 25 30  
W--> 61 Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
62 35 40

63 <210> SEQ ID NO 2

64 <211> LENGTH: 42

65 <212> TYPE: PRT

66 <213> ORGANISM: Artificial Sequence

67 <220> FEATURE:

68 <223> OTHER INFORMATION: Description of Artificial Sequence:generic  
69 sequence of gamma-conopeptides.

70 <220> FEATURE:

71 <221> NAME/KEY: PEPTIDE

72 <222> LOCATION: (1)..(13)

73 <223> OTHER INFORMATION: Xaa at residues 1, 2, 3, 4, 5 and 6 may be des-Xaa  
74 or any amino acid; Xaa at residues 8, 9, 10, 11,  
75 and 12 may be any amino acid; Xaa at residue 13  
76 may be des-Xaa or any amino acid.

77 <220> FEATURE:

78 <221> NAME/KEY: PEPTIDE

79 <222> LOCATION: (15)..(22)

80 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino  
81 acid; Xaa at residue 19 is Glu,  
82 gamma-carboxyglutamate or Gln; Xaa at residue 22  
83 is Ser or Thr.

84 <220> FEATURE:

85 <221> NAME/KEY: PEPTIDE

86 <222> LOCATION: (23)..(29)

87 <223> OTHER INFORMATION: Xaa at residues 23 and 24 may be any amino acid;  
88 Xaa at residue 25 may be des-Xaa or any amino  
89 acid; Xaa at residues 27, 28 and 29 may be any  
90 amino acid.

91 <220> FEATURE:

92 <221> NAME/KEY: PEPTIDE

93 <222> LOCATION: (30)..(42)

94 <223> OTHER INFORMATION: Xaa at residues 30, 31 and 32 may be des-Xaa or

PAGE: 3

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952A

DATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

95 any amino acid; Xaa at residues 34 and 35 may be  
96 any amino acid; Xaa at residues 36, 37, 38, 39,  
97 40, 41 and 42 may be des-Xaa or any amino acid.  
98 <400> SEQUENCE: 2  
W--> 99 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
100 1 5 10 15  
W--> 101 Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa  
102 20 25 30  
W--> 103 Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
104 35 40  
105 <210> SEQ ID NO 3  
106 <211> LENGTH: 39  
107 <212> TYPE: PRT  
108 <213> ORGANISM: Artificial Sequence  
109 <220> FEATURE:  
110 <223> OTHER INFORMATION: Description of Artificial Sequence:generic formula  
111 of gamma-conopeptides  
112 <220> FEATURE:  
113 <221> NAME/KEY: PEPTIDE  
114 <222> LOCATION: (1)..(13)  
115 <223> OTHER INFORMATION: Xaa at residue 1 is any amino acid; Xaa at  
116 residues 2, 3, 4, 5 and 6 may be des-Xaa or any  
117 amino acid; Xaa at residues 8, 9, 10, 11, 12 and  
118 13 may be any amino acid.  
119 <220> FEATURE:  
120 <221> NAME/KEY: PEPTIDE  
121 <222> LOCATION: (27)..(39)  
122 <223> OTHER INFORMATION: Xaa at residues 27, 28, 29, 31, 32, 33, 34, 35, 36  
123 and 37 may be any amino acid; Xaa at residues 38  
124 and 39 may be des-Xaa or any amino acid.  
125 <220> FEATURE:  
126 <221> NAME/KEY: PEPTIDE  
127 <222> LOCATION: (15)..(19)  
128 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino  
129 acid; Xaa at residue 19 is Glu,  
130 gamma-carboxyglutamate or Gln.  
131 <400> SEQUENCE: 3  
W--> 132 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
133 1 5 10 15  
W--> 134 Xaa Xaa Xaa Cys Cys Ser Asn Ser Cys Asp Xaa Xaa Xaa Cys Xaa Xaa  
135 20 25 30  
W--> 136 Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
137 35  
138 <210> SEQ ID NO 4  
139 <211> LENGTH: 39  
140 <212> TYPE: PRT  
141 <213> ORGANISM: Artificial Sequence  
142 <220> FEATURE:  
143 <223> OTHER INFORMATION: Description of Artificial Sequence:generic  
144 sequence of gamma-conopeptides.

PAGE: 4

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952A

DATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

145 <220> FEATURE:  
146 <221> NAME/KEY: PEPTIDE  
147 <222> LOCATION: (1)..(13)  
148 <223> OTHER INFORMATION: Xaa at residue 1 is any amino acid; Xaa at  
149 residues 2, 3, 4, 5 and 6 may be des-Xaa or any  
150 amino acid; Xaa at residues 8, 9, 10, 11, 12 and  
151 13 may be any amino acid.  
152 <220> FEATURE:  
153 <221> NAME/KEY: PEPTIDE  
154 <222> LOCATION: (15)..(19)  
155 <223> OTHER INFORMATION: Xaa at residue 15 is Ser or Thr; Xaa at residues  
156 16, 17 and 18 may be any amino acid; Xaa at  
157 residue 19 is Glu, gamma-carboxyglutamate or Gln.  
158 <220> FEATURE:  
159 <221> NAME/KEY: PEPTIDE  
160 <222> LOCATION: (27)..(39)  
161 <223> OTHER INFORMATION: Xaa at residues 27, 28, 29, 31, 32, 33, 34, 35, 36  
162 and 37 may be any amino acid; Xaa at residues 38  
163 and 39 may be des-Xaa or any amino acid.  
164 <400> SEQUENCE: 4  
W--> 165 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
166 1 5 10 15  
W--> 167 Xaa Xaa Xaa Cys Cys Ser Asn Ser Cys Asp Xaa Xaa Xaa Cys Xaa Xaa  
168 20 25 30  
W--> 169 Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
170 35  
171 <210> SEQ ID NO 5  
172 <211> LENGTH: 34  
173 <212> TYPE: PRT  
174 <213> ORGANISM: Artificial Sequence  
175 <220> FEATURE:  
176 <223> OTHER INFORMATION: Description of Artificial Sequence: generic  
177 sequence of gamma-conopeptides.  
178 <220> FEATURE:  
179 <221> NAME/KEY: PEPTIDE  
180 <222> LOCATION: (1)..(6)  
181 <223> OTHER INFORMATION: Xaa at residues 1 and 2 may be des-Xaa or a any  
182 amino acid; Xaa at residue 3 is Asp, Glu or  
183 gamma-carboxyglutamate; Xaa at residues 5 and 6  
184 may be any amino acid.  
185 <220> FEATURE:  
186 <221> NAME/KEY: PEPTIDE  
187 <222> LOCATION: (7)..(16)  
188 <223> OTHER INFORMATION: Xaa at residue 7 is Trp or 6-bromo-Trp; Xaa at  
189 residues 9, 10, 13 and 14 may be any amino acid;  
190 Xaa at residue 16 is Glu, gamma-carboxyglutamate  
191 or Gln.  
192 <220> FEATURE:  
193 <221> NAME/KEY: PEPTIDE  
194 <222> LOCATION: (28)..(34)

PAGE: 5

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/210,952A

DATE: 01/28/2000  
TIME: 11:59:04

Input Set: I210952A.RAW

195 <223> OTHER INFORMATION: Xaa at residues 28, 30, 31, 32, 33 and 34 may be  
196 any amino acid.

197 <400> SEQUENCE: 5  
W--> 198 Xaa Xaa Xaa Cys Xaa Xaa Xaa Phe Xaa Xaa Cys Thr Xaa Xaa Ser Xaa  
199 1 5 10 15  
W--> 200 Cys Cys Ser Asn Ser Cys Asp Trp Thr Tyr Cys Xaa Leu Xaa Xaa Xaa  
201 20 25 30  
W--> 202 Xaa Xaa

203 <210> SEQ ID NO 6  
204 <211> LENGTH: 32  
205 <212> TYPE: PRT  
206 <213> ORGANISM: Conus pennaceus  
207 <220> FEATURE:  
208 <221> NAME/KEY: PEPTIDE  
209 <222> LOCATION: (1)..(31)  
210 <223> OTHER INFORMATION: Xaa at residue 5 is Trp or 6-bromo-Trp; Xaa at  
211 residues 14 and 26 are Glu or  
212 gamma-carboxyglutamate; Xaa at residue 31 is Pro  
213 or hydroxy-Pro.

214 <400> SEQUENCE: 6  
W--> 215 Asp Cys Thr Ser Xaa Phe Gly Arg Cys Thr Val Asn Ser Xaa Cys Cys  
216 1 5 10 15  
W--> 217 Ser Asn Ser Cys Asp Gln Thr Tyr Cys Xaa Leu Tyr Ala Phe Xaa Ser  
218 20 25 30

219 <210> SEQ ID NO 7  
220 <211> LENGTH: 34  
221 <212> TYPE: PRT  
222 <213> ORGANISM: Conus textile  
223 <220> FEATURE:  
224 <221> NAME/KEY: PEPTIDE  
225 <222> LOCATION: (1)..(34)  
226 <223> OTHER INFORMATION: Xaa at residues 1, 7 and 34 are Trp or  
227 6-bromo-Trp; Xaa at residues 3 and 16 are Glu or  
228 gamma-carboxyglutamate; Xaa at residues 31 and 32  
229 are Pro or hydroxy-Pro.

230 <400> SEQUENCE: 7  
W--> 231 Xaa Leu Xaa Cys Ser Val Xaa Phe Ser His Cys Thr Lys Asp Ser Xaa  
232 1 5 10 15  
W--> 233 Cys Cys Ser Asn Ser Cys Asp Gln Thr Tyr Cys Thr Leu Met Xaa Xaa  
234 20 25 30  
W--> 235 Asp Xaa

236 <210> SEQ ID NO 8  
237 <211> LENGTH: 39  
238 <212> TYPE: PRT  
239 <213> ORGANISM: Conus textile  
240 <220> FEATURE:  
241 <221> NAME/KEY: PEPTIDE  
242 <222> LOCATION: (1)..(39)  
243 <223> OTHER INFORMATION: Xaa at residues 1, 2, 4, 10 and 39 are Trp or  
6-bromo-Trp ; Xaa at residues 19 and 31 are Glu or

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the  
Sequence Listing to ensure that a corresponding explanation is presented in the <220> to  
<223> fields of each sequence which presents at least one n or Xaa.

Input Set: I210952A.RAW

Line	Error/Warning	Original Text
57	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa X
59	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Xaa Cys X
61	W "N" or "Xaa" used: Feature required	Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
99	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa X
101	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Xaa Cys X
103	W "N" or "Xaa" used: Feature required	Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
132	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa X
134	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Cys Cys Ser Asn Ser Cys Asp X
136	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Xaa Xaa
165	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa X
167	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Cys Cys Ser Asn Ser Cys Asp X
169	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Xaa Xaa Xaa Xaa
198	W "N" or "Xaa" used: Feature required	Xaa Xaa Xaa Cys Xaa Xaa Xaa Phe Xaa Xaa C
200	W "N" or "Xaa" used: Feature required	Cys Cys Ser Asn Ser Cys Asp Trp Thr Tyr C
202	W "N" or "Xaa" used: Feature required	Xaa Xaa
215	W "N" or "Xaa" used: Feature required	Asp Cys Thr Ser Xaa Phe Gly Arg Cys Thr V
217	W "N" or "Xaa" used: Feature required	Ser Asn Ser Cys Asp Gln Thr Tyr Cys Xaa L
231	W "N" or "Xaa" used: Feature required	Xaa Leu Xaa Cys Ser Val Xaa Phe Ser His C
233	W "N" or "Xaa" used: Feature required	Cys Cys Ser Asn Ser Cys Asp Gln Thr Tyr C
235	W "N" or "Xaa" used: Feature required	Asp Xaa
248	W "N" or "Xaa" used: Feature required	Xaa Xaa Arg Xaa Gly Gly Cys Met Ala Xaa P
250	W "N" or "Xaa" used: Feature required	Asp Ser Xaa Cys Cys Ser Asn Ser Cys Asp V
252	W "N" or "Xaa" used: Feature required	Met Xaa Phe Xaa Xaa Asp Xaa
264	W "N" or "Xaa" used: Feature required	Cys Lys Thr Tyr Ser Lys Tyr Cys Xaa Ala A
266	W "N" or "Xaa" used: Feature required	Xaa Gln Cys Val Arg Ser Tyr Cys Thr Leu P
280	W "N" or "Xaa" used: Feature required	Asp Xaa Xaa Asp Asp Gly Cys Ser Val Xaa G
282	W "N" or "Xaa" used: Feature required	Ala Xaa Cys Cys Ser Gly Asp Cys His Xaa T
284	W "N" or "Xaa" used: Feature required	Xaa Val
297	W "N" or "Xaa" used: Feature required	Gly Met Xaa Gly Xaa Cys Lys Asp Gly Leu T
299	W "N" or "Xaa" used: Feature required	Ser Xaa Cys Cys Ser Xaa Asp Cys Xaa Gly S
312	W "N" or "Xaa" used: Feature required	Xaa Cys Arg Ala Xaa Tyr Ala Xaa Cys Ser X
328	W "N" or "Xaa" used: Feature required	Asn Gly Gln Cys Xaa Asp Val Xaa Met Xaa C
330	W "N" or "Xaa" used: Feature required	Cys Cys Ser Leu Asp Cys Xaa Met Tyr Cys T
343	W "N" or "Xaa" used: Feature required	Cys Gly Gly Xaa Ser Thr Tyr Cys Xaa Val A
345	W "N" or "Xaa" used: Feature required	Xaa Ser Cys Val Arg Ser Tyr Cys Thr Leu P
358	W "N" or "Xaa" used: Feature required	Asn Gly Gly Cys Lys Ala Thr Xaa Met Ser C
538	W "N" or "Xaa" used: Feature required	ctctgccggt tgacacntca tctactctct cagtctcc
759	W Invalid/Missing Amino Acid Numbering	
790	W "N" or "Xaa" used: Feature required	Leu Cys Xaa Asp Tyr Thr Xaa Xaa Cys Ser H
792	W "N" or "Xaa" used: Feature required	Ser Xaa Asn Cys Tyr Asn Gly His Cys Thr
806	W "N" or "Xaa" used: Feature required	Xaa Cys Cys Ser
825	W "N" or "Xaa" used: Feature required	sartgytgyt cn
845	W "N" or "Xaa" used: Feature required	athytnytng tngcngcngt nytn
857	W "N" or "Xaa" used: Feature required	Asp Cys Thr Ser Trp Phe Gly Arg Cys Thr V
859	W "N" or "Xaa" used: Feature required	Ser Asn Ser Cys Asp Gln Thr Tyr Cys Xaa L
871	W "N" or "Xaa" used: Feature required	Cys Gly Gly Tyr Ser Thr Tyr Cys Xaa Val A
884	W "N" or "Xaa" used: Feature required	Asp Xaa Thr Ser Trp Phe Gly Arg
897	W "N" or "Xaa" used: Feature required	Xaa Thr Val Asn Ser Xaa Xaa Xaa Ser Asn S
899	W "N" or "Xaa" used: Feature required	Xaa Xaa Leu Tyr Ala Phe Xaa Ser